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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/622,063

07/17/2003

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126762

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41838 7590 01/25/2007  
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EXAMINER

KOCH, GEORGE R

ART UNIT

PAPER NUMBER

1734

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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2 MONTHS

01/25/2007

PAPER

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/622,063  
Filing Date: July 17, 2003  
Appellant(s): RUTKOWSKI ET AL.

**MAILED**  
**JAN 25 2007**  
**GROUP 1700**

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Patrick S. Yoder  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 11/03/2006 appealing from the Office action mailed 2/10/2006.

**(1) Real Party in Interest**

A statement identifying by name the real party in interest is contained in the brief.

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is substantially correct.

Claims 1-6, 11-12, and 17-26 are currently pending.

Claims 1-3, 11, and 24 are rejected.

Claims 4-6, 12, 17-23 and 25-26 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

This appeal involves claims 1-3, 11, and 24.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

5,932,012	Ishida	8-1999
6,197,115	Barrey	3-2001
6,562,406	Chikahisa	5-2003
WO 99/49987	Chikahisa	10-1999
6,039,375	Bauman	3-2000
5,890,656	Fuhlbrigge	4-1999
5,833,147	Fuhlbrigge	11-1998
5,777,267	Szydel	7-1998

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1-3, 11, and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishida (US 5,932,012) in view of Barrey (US 6,197,115) and either of the identical Chikahisa (US 6,562,406) or Chikahisa (WO99/49987)

Ishida discloses a robotic pen (see Figure 1) comprising a machine including a stage (items 5, 6 and 8) for mounting a workpiece for rotation and orthogonal translation (described in column 5, lines 3-55), and an elevator (items 4a and 10) for translation from said stage; a pen tip (nozzle 1) mounted to said elevator; a dispenser (syringe 2 and nozzle support 12) joined in flow communication with said pen tip for ejecting a stream of material atop said workpiece; and a digital controller (items 14, 16, 17 and 18, and see column 6, line 61 to column 7, line 61) configured for coordinating relative movement of said pen tip and said stage, and dispensing of said stream from said pen tip.

Ishida does not disclose that the pen is rotatably mounted to the elevator, or that the stage permits translation generally in a plane and rotation about an axis generally parallel to the plane.

Barrey discloses that it is known to use a stage or end effector for permitting translation generally in a plane and rotation about an axis generally parallel to the plane. Barrey discloses that a multi-axis robot structure allows for the application of sealant to a surface that lies in 2 or more dimensional planes with a smooth and consistent motion (see column 2, lines 54-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a robot stage as in Barrey for

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the X-Y table of Ishida in order to apply coatings such as the sealant of Ishida and Chikahisa to a surface that lies in 2 or more dimensional planes.

Chikahisa (either US patent or the English translation of WO99/49987) discloses a similar syringe and nozzle applying device wherein a member rotating device (item 230) is used to rotate the nozzles for application. Chikahisa discloses that this rotation enable a shift to a position so as not to come in contact with the wiring (i.e., dispensing) pattern (see column 11, lines 40-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize a rotary mounting in order to achieve better control over nozzle positioning shifts during dispensing.

As to claim 2, Both Ishida and Chikahisa disclose that the dispenser comprises: a syringe (Ishida, item 2 and Chikahisa, item 2153) for storing said material, and joined in flow communication with said pen tip; and means for pumping (Ishida, described in column 5, lines 56-60, and Chikahisa, item 2154) said syringe to dispense material through said pen tip. The applicant's specification does not provide a specific example of a means for pumping other than it needs to be computer controller actuated, which is disclosed in both Ishida and Chikahisa.

As to claim 3, Ishida discloses that the controller includes a predetermined path for the pen tip thereacross (see column 3, lines 18-33) and a three dimensional geometry of the workpiece (i.e., measurement data). Similarly, Barrey as incorporated discloses a controller for working with 3-dimensional geometries (see column 4, lines 32-60).

As to claim 11, Ishida discloses a robotic pen (Figure 1) comprising: a computer numerically controlled machine (items 14, 16, 17 and 18) including a stage (items 5, 6 and 8) for mounting a workpiece for rotation and orthogonal translation (see column 5, for example), and an elevator (items 4a and 10) for translation from said stage; a pen tip (item 1) mounted to said elevator, and a dispenser (syring 2) joined in flow communication with said pen tip for ejecting a stream of material atop said workpiece.

Ishida does not disclose that the pen is rotatably mounted to the elevator, or that the stage permits translation generally in a plane and rotation about an axis generally parallel to the plane.

Barrey discloses that it is known to use a stage or end effector for permitting translation generally in a plane and rotation about an axis generally parallel to the plane. Barrey discloses that a multi-axis robot structure allows for the application of sealant to a surface that lies in 2 or more dimensional planes with a smooth and consistent motion (see column 2, lines 54-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a robot stage as in Barrey for the X-Y table of Ishida in order to apply coatings such as the sealant of Ishida and Chikahisa to a surface that lies in 2 or more dimensional planes.

Chikahisa discloses a similar syringe and nozzle applying device wherein a member rotating device (item 230) is used to rotate the nozzles for application. Chikahisa discloses that this rotation enables a shift to a position so as not to come in contact with the wiring (i.e., dispensing) pattern (see column 11, lines 40-45). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the

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invention to utilize a rotary mounting in order to achieve better control over nozzle positioning shifts during dispensing.

Claim 24 is rejected on similar grounds as claims 1 and 11 above.

#### **(10) Response to Argument**

Applicant's sole argument can be summed up into the proposition that Barrey fails to disclose or describe that the gripping tool is rotatable about the longitudinal axis of the arm. Based on applicant's added axis in Figure 1 (page 9 of the brief), it appears that applicants believe that the rotation must occur about what applicant labels as "axis 3".

However, the actual language is slightly broader, and requires that a "stage permitting translation generally in a plane and rotation about an axis generally parallel to the plane."

Any axis of rotation that is generally parallel to any orthogonal translation plane would suffice to read on this language. Applicant, thus, is arguing that Barrey fails to disclose such movement.

However, this is not persuasive. Barrey discloses that the gripping tool moves in such that it is a stage permitting translation generally in a plane and rotation about an axis generally parallel to the plane.

The robot of Barrey is disclosed as having 6-axes of motion (abstract, multiple locations in the specification). The term six axis robot is well understood in the art as a robot capable of being moved any point and angle and inherently is capable of being



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moved such that it permits translation in a plane and rotation about an axis generally parallel to said plane.

Examples of such robots manufactured by the same assignee as the Barrey patent are in US Patents 6,039,375; 5,890,656; 5,833,147; 5,777,267; Barrey was cited to show that such unlimited positional control for the substrate, relative to a dispenser, is known.

Additionally, as applicant admits, Barrey clearly discloses at least one rotational axis (the axis applicant labels as axis 1). Barrey also discloses moving the substrate to any point in a 3-dimensional coordinate space for the movements of the end effector (column 2, lines 47-57). Thus, axis 1 of Barrey, which is rotational, and relative the three dimensional axis of the end effect, must be create rotation about an axis generally parallel to the plane (of the end effector).

Additionally, there clearly must be an additional rotational axis at the end effector, in order to maintain the substrate in proper relationship to the stationary dispenser. Barrey's end effector maintains the substrate in position against a fixed dispenser. Without a rotation axis at the end effector, movement about what applicant labeled in page 9 of the brief as the "axis 2" pivot point for raising or lowering the arm would be unsuccessful, as the end effector would lowered out of angular position from the dispenser.

Since Barrey discloses 6 different axes of movement, and at least multiple axes of rotation, it discloses "a stage permitting translation generally in a plane and rotation about an axis generally parallel to the plane".

**(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

George Koch



Conferees:



Christopher A. Fiorilla  
Supervisory Patent Examiner  
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